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CARRYING PETROLEUM AND PETROLEUM PRODUCTS ON USSR RAILROADS

Petroleum and petroleum products make up 5.3 percent of the freight turnover of the railroads in tons and 8.0 percent in ton-kilometers (1947 figures). The average length of haul of petroleum and petroleum products on the railroads is characterized by the following figures:

Year	Kilometers
1913	601
1934	959
1940	1,234
1945	1,115
1946	1,123
1947	1,074

In 1947, the average length of haul for petroleum and petroleum products amounted to 1,074 kilometers, gasoline was carried 1,412 kilometers, mazut was carried 948 kilometers, and crude oil and motor oil were carried an average of 613 kilometers. During the Five-Year Plans a fundamental change took place in the geographical distribution of petroleum extraction, and a more uniform distribution of the petroleum industry throughout the USSR resulted from the development, particularly during World War II, of petroleum extraction and processing in the eastern regions of the USSR. As a result, at the end of the postwar Five-Year Plan the proportion of petroleum extracted in the eastern regions of the USSR amounted to 36 percent, compared with 2.6 percent in 1934.

Nevertheless, it is necessary to note that despite the rapid development of petroleum extraction in the eastern regions of the USSR, the extraction of petroleum in the Caucasus will still occupy the prevailing position.

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At present, the increase in petroleum extraction in the Bashkir ASSR is due mainly to the development of the Tuymaza area. In the Uzbek SSR, petroleum fields of the "Kalininneft'" Trust in 1950 will increase the extraction of petroleum by nine times, compared to 1949.

Crude petroleum and mazut now comprise 40 percent of the total volume of petroleum and petroleum products hauled. However, the development of petroleum extraction and processing in the eastern regions of the country in conjunction with the utilization of river transport and the extensive construction of petroleum pipelines creates the necessary prerequisites for the reduction of the average length of haul on the railroads for petroleum and petroleum products. As a consequence of the vigorous development of petroleum extraction in the eastern regions of the USSR, the average length of haul of crude petroleum in the eastern regions of the USSR is still more than twice the average length of haul of crude petroleum in the southern and western regions.

Freight Flow of Petroleum

The geographical distribution of the petroleum extraction industry predetermines the great significance in the hauling of petroleum and petroleum products of the Volga River, which, through the Caspian Sea, connects Baku and the Volga regions. The Volga River, through the Caspian Sea, the Belaya River, and the Canal imeni Moskva, connects the large petroleum-extracting areas with the petroleum-processing plants. Furthermore, the location of petroleum bases on the banks of the Volga makes possible the transfer, during the navigation period, of petroleum products from the Caucasus regions to the petroleum bases, from where they may be transported between navigation periods to the various regions of the country.

It must be noted that the supplying of the regions of Siberia from the Batraki and Molotov areas, instead of from the Krasnovodsk area, permits a considerable reduction in the hauling of petroleum by the railroads.

In view of the great importance of river and maritime transport in petroleum hauling, the flow patterns of petroleum products are worked out by the Main Administration of Petroleum Sales in cooperation with the Ministry of Transportation separately for the periods between navigation and the navigation period.

The basic routes of the flow of the most important types of petroleum products are as follows:

Tractor kerosene from Baku is shipped by sea to Krasnovodsk and from there by railroad to the republics of Central Asia, the Altay region, Krasnoyarsk Kray, and on to the Far East. During the navigation period, kerosene from Baku is sent by sea to Astrakhan', whence it is shipped to Saratov and then by railroad to the eastern regions of the country.

Along with this, some part of the kerosene is shipped by the Volga to Batraki and Molotov, where it is transshipped anew to the railroad to supply the eastern regions of the country. Kerosene from the Baku area is shipped also to Makhachkala, where it goes to supply the Caucasus regions and Rostov Oblast. From Trudovaya, kerosene goes to supply the Ukraine, the Center, and the western and the northwestern areas. To supply the western regions of the Ukraine, kerosene is shipped from Batumi by maritime transport to Odessa, from where it is shipped by rail.

During the nonnavigation period, kerosene is shipped by rail from Groznyy to Astrakhan', whence it is sent to Saratov.

Similar routes are established for illuminating kerosene.

Automobile gasoline is shipped from Baku to the Azerbaydzhan and Armenian SSR, from Groznyy to the Donets Basin area by railroad, from Krasnodar to Rostov Oblast, and from Odessa to Belorussia, the northwestern areas, and the western Ukraine. The Volga bases supply the northern areas. From Saratov, automobile gasoline is shipped by rail to the Volga area and to the western areas, while from the Volga bases automobile gasoline is sent to the Ural regions, Central Asia, and to the Far East.

Similar freight flows are established for motor fuel, lubricating oils, boiler and fleet mazuts, solar oil, and various types of gasolines.

Planning the Hauling of Petroleum and Petroleum Products

The Ministry of Petroleum Industry USSR plans the hauling of crude petroleum products. The planning of the hauling of crude petroleum is done on a basis of the stocks of crude petroleum. Beginning with the plan for the extraction of crude petroleum by trusts and the distribution of it to petroleum-processing plants, the distribution of petroleum by types of transport is carried out, first by pipelines, then by water, and finally by rail transport. The norms for tank cars required for the hauling of crude petroleum are determined on the basis of these calculations. The planning of the hauling of petroleum products from the petroleum-processing plants is done by the Main Administration of Petroleum Sales of the Ministry of Petroleum Industry.

To plan the hauling of petroleum products, the task entails first, guaranteeing the execution of the plan for supplying the national economy with petroleum products, and second, ensuring the normal operation of the petroleum-processing plants by promptly removing the products from the plants and uninterruptedly supplying petroleum raw material. Therefore, after determining the number of tank cars required for the execution of the plan for supplying the national economy with petroleum products and the compilation of the plan for hauling, a check is made of the deviation in the amount of petroleum products remaining in each petroleum-processing plant in relation to the plan for hauling petroleum.

On the basis of the plans for supplying the national economy with petroleum products, consumer ministries send orders which are approved by the Council of Ministers USSR and broken down by region of consumption and type of petroleum product to the Main Administration of Petroleum Sales. The Ministry of Petroleum Industry establishes a plan for commodity production for the petroleum-processing plants in conformance with the plan for processing petroleum.

Starting with the standard pattern of freight flow established for the various types of petroleum products, and taking into account the regional accumulation of production and consumption, the Main Administration for Petroleum Sales assigns petroleum products loading points for each type of petroleum product to the regions of consumption and presents to the Ministry of Transportation a plan for loading petroleum products according to the railroad systems of origin and railroad systems of destination.

The supplying ministries inform the oblast administrations of the Main Administration of Petroleum Sales of the destination points for the petroleum products, and the oblast administrations in turn send generalized data concerning all the ministries to the loading points, taking into consideration the maximum use of long-haul routing for their own areas.

On the basis of information received concerning destination points, the oblast loading point administrations of the Main Administration of Petroleum Sales submit to the railroad system administrations a detailed hauling plan indicating the stations and railroad systems of origin and the stations and systems of destination.

The planning of hauling of petroleum products should make the maximum possible use of long-haul routing. By the order of the Ministry of Transportation and the Main Administration of Petroleum Sales of 10 February 1947, a procedure was established whereby loading points dispatching 200 cars or more per month to single destinations should dispatch the cars in long-haul trains exclusively to dispersal points for subsequent addressing to destination, providing that the points of destination can handle the unloading of complete trains.

On the railroad network, 75 tank-car train dispersal points covering definite areas of the railroad network have been set up. Loaded tank-car trains are dispatched from loading points to the dispersal points in accordance with the plan for supply of petroleum products to the oblast administrations of the Main Administration for Petroleum Sales.

Tank cars loaded with petroleum products arriving in other trains at dispersal points are readdressed to destination points.

To secure the long-haul routing of petroleum products, it is categorically forbidden to address the tank cars included in one train to different dispersal points or to unloading points located in areas served by different dispersal points. Single tank cars or small groups of tank cars addressed directly to unloading stations should be sent from the loading points only in tank-car trains going to dispersal points.

Railroad division heads together with the oblast administrations of the Main Administration of Petroleum Sales establish for each 5-day period a calendar plan of the loading of petroleum products for long-haul and multiple-destination trains.

Efficient Hauling of Petroleum and Petroleum Products

The efficient hauling of petroleum and petroleum products has great significance for the railroads because the empty runs of tank cars amount to 90-100 percent of the runs of loaded tank cars.

The goal of a yearly production of 60 million tons of petroleum in the USSR should be accompanied by measures to make more efficient the hauling of petroleum, namely:

1. The reduction of the hauling of crude petroleum by railroad from one point to another when petroleum products are carried in the reverse direction. Crude petroleum should, as a rule, be transported from the fields to the processing plants by pipeline.

2. An increase in every way of the extraction of petroleum in the eastern regions of the USSR, particularly in the remote areas of the Far East, and also the development of the processing of petroleum products in these areas to satisfy completely the adjacent areas in regard to kerosene, diesel and motor fuels, and also petroleum bitumens. It must be kept in mind that the cost of hauling 1,000 tons of petroleum products from Krasnovodsk to Vladivostok amounts to 503,700 rubles and to haul each 1,000 tons of petroleum products it is necessary to expend 1,350 tons of natural fuel.

3. The development of pipelines for transporting petroleum products over long distances, and also increasing the role of maritime and particularly river transport in hauling petroleum and petroleum products over long distances.

4. The expansion of the use of sulfurous mazuts in the eastern areas to relieve the railroads from long hauls; also, removing the sulfur from the petroleum in the Second Baku area, a process which will make possible a greater utilization of mazuts produced from this petroleum in the Urals, thus relieving the railroads of the task of bringing in mazut from greater distances.

5. Saving fuel in remote areas which use fuel brought in from a great distance, by means of the utilization of gas-generator tractors and automobiles and using for them, peat, coal, and wood; also, decreasing the consumption of liquid fuel in small station installations by increasing the capacity of electric power stations and using wind-operated machinery.

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